

**REMARKS**

Reconsideration and allowance of this application are respectfully requested. Currently, claims 1-10 are pending in this application.

**Double Patenting Rejection**

Claims 1-10 were rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 1-55 of U.S. Patent No. 6,684,097. Applicant has submitted herewith a timely filed Terminal Disclaimer to overcome this double patenting rejection. Applicant thus respectfully requests that the non-statutory obviousness-type double patenting rejection of claims 1-10 of the present application be withdrawn.

**Rejection Under 35 U.S.C. §102**

Claims 1-10 were rejected under 35 U.S.C. §102 as allegedly anticipated by Badger et al. (US '436, hereinafter "Badger"). Applicant respectfully traverses this rejection.

Anticipation under Section §102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1574 (Fed. Cir. 1986). Badger fails to disclose every element of the claimed invention. For example, Badger fails to disclose (or even suggest) "obtaining a first x-ray image of said tissue region of interest, ... acquiring at least a second x-ray image of said tissue region of interest after at least a portion of said thermal treatment, ... [and] generating thermal information in relation to each of said spatial locations by employing said first x-ray image and said at least a second x-ray image, wherein said thermal information is

indicative of relative magnitudes of temperature changes for each of said spatial locations throughout said tissue region of interest," as required by independent claim 1 and its dependents.

The Office Action apparently alleges that column 8, lines 1-6 (specifically identified by the Office Action) of Badger discloses the above noted claim limitations. Applicant respectfully disagrees with this allegation. Column 8, Lines 1-6 of Badger states the following:

“The spatial location of the tumor should already have been established with reasonable accuracy by other means, such as, x-ray radiography or fluoroscopy, or simply by sense of touch to isolate the tumor position if the tumor is near the skin surface.”  
*(Emphasis Added)*

Column 8, lines 1-6 of Badger merely discloses using x-ray radiography or fluoroscopy to determine the spatial locations of a tumor and temperature sensors 38. Indeed, Column 8, lines 6-8 (which immediately follow the above cited portion of Badger) explicitly states “The relative spatial locations of the temperature sensors 38 and the tumor should be determined with good accuracy.” Badger’s x-ray radiography or fluoroscopy is therefore not used to monitor temperature changes, but rather is merely used to localize the tumor and/or spatial locations of temperature sensors 38 before thermal treatment even begins. Badger therefore fails to disclose employing first and second x-ray images of the tissue region of interest to generate thermal information indicative of relative values of temperature changes for spatial locations throughout the tissue region of interest as required by independent claim 1 its dependents.

Badger discloses measuring temperature changes via thermometry unit 36 having temperature sensors such as copper-constantan thermocouples (column 4, lines 60-68), hypodermic syringes (column 5, lines 6-7) or thermistors (column 5, lines 8-11). However, Badger fails disclose or even suggest utilizing a plurality of x-ray images to monitor the

progression of temperature change. As discussed above, Badger's reference to x-ray radiography or fluoroscopy in column 8, lines 1-6 (the only mention of "x-ray" in the entire reference) is used to establish the positions of the tumor and temperature sensors. Column 7, lines 61-68 of Badger stating, "...enables the operator to monitor and adjust the applied energy detected by the plurality of temperature sensors 38 in order to achieve the predetermined temperature protocol for optimum therapeutic effect. The operator begins the treatment procedure by placement of the temperature sensors 38 in the patient's body..." clearly discloses that Badger uses a discrete number of temperature sensors that measure the temperature at various spatial locations. The temperature measured by sensors 38 (explicitly identified as thermocouples, hypodermics syringes or thermistors) at these spatial locations is used to control the heat treatment energy. Measurements from temperature sensors 38 therefore do not involve generating thermal information for spatial locations of a tissue region of interest by employing x-ray images as claimed. The temperature sensors 38 are clearly not used to display an image showing the progression of temperature change during treatment.

Accordingly, Applicant respectfully requests that the rejection of claims 1-10 under 35 U.S.C. §102 be withdrawn.

Appl. Serial No. 10/727,137  
Jean-Marie PAREL et al.

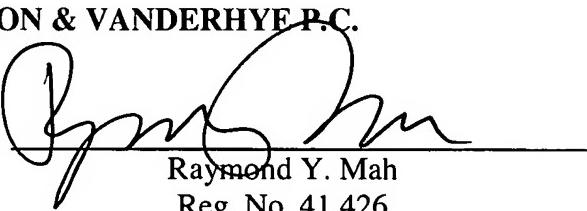
**CONCLUSION:**

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:



Raymond Y. Mah  
Reg. No. 41,426

RYM:meu  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100